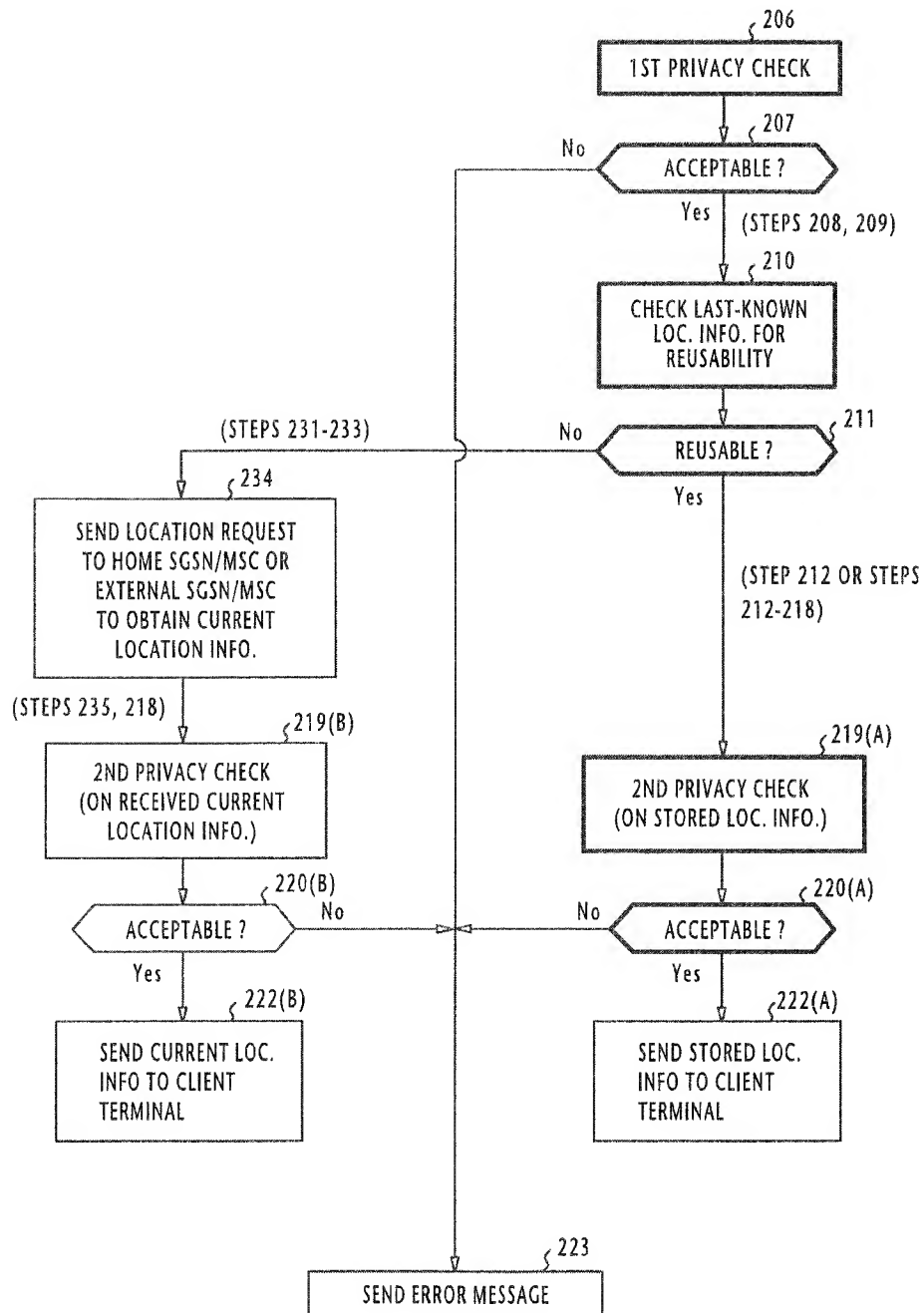## Remarks

Claims 100-114 were rejected under 35 U.S.C. 112, first paragraph. The Official Action alleges that the specification does not support the limitation, " wherein the gateway …., and if the stored location information satisfies the requested accuracy and the requested allowable age, then performs a second privacy check without transmitting the location request to the positioning system in order to decide whether the gateway can transmit the stored location information to the client terminal." Reconsideration and withdrawal of the rejection are respectfully requested.

For a better understanding of the present invention, we have summarized the steps shown in Figs. 12A and 12B to illustrate the features of claim 100 by labeling steps 219, 220 and 222 with (A) or (B) depending on the decision of step 211, as shown in the attached drawing. The claimed first privacy check is performed on a received location request for verification (steps 206, 207) and a reusability check is performed to determine if previously stored location information satisfies the accuracy and allowable age specified in the verified location request. This reusability check is represented by steps 210 and 211. The second privacy check is performed by steps 219-222 either on the stored location information or currently obtained location information depending on a result of the reusability check performed by step 211. See also page 24, lines 1-27.

```
                                              ┌─────────────────────┐ ⌐206
                                              │  1ST PRIVACY CHECK  │
                                              └─────────────────────┘
                                                        │
                        No                         ⌐207 ▼
                     ┌─────────────────────────◁ ACCEPTABLE ? ▷
                     │                                  │
                     │                                 Yes    (STEPS 208, 209)
                     │                                  │
                     │                                  ▼
                     │                         ┌─────────────────────┐ ⌐210
                     │                         │  CHECK LAST-KNOWN   │
                     │                         │   LOC. INFO. FOR    │
                     │                         │     REUSABILITY     │
                     │                         └─────────────────────┘
                     │                                  │
     (STEPS 231-233) │                          No      ▼              ⌐211
  ┌──────────────────┼──────────────◁────────────── REUSABLE ? ▷
  │                  │                                  │
  ▼ ⌐234            │                                 Yes
┌─────────────────────────┐                            │
│  SEND LOCATION REQUEST  │                            │     (STEP 212 OR STEPS
│   TO HOME SGSN/MSC OR   │                            │        212-218)
│   EXTERNAL SGSN/MSC     │                            │
│   TO OBTAIN CURRENT     │                            │
│    LOCATION INFO.       │                            │
└─────────────────────────┘                            │
  │                                                     │
  │ (STEPS 235, 218)                                    │
  ▼                     ⌐219(B)                         ▼                 ⌐219(A)
┌─────────────────────────┐                  ┌─────────────────────────┐
│   2ND PRIVACY CHECK     │                  │    2ND PRIVACY CHECK    │
│  (ON RECEIVED CURRENT   │                  │   (ON STORED LOC. INFO.)│
│     LOCATION INFO.)     │                  │                         │
└─────────────────────────┘                  └─────────────────────────┘
  │                                                     │
  ▼        ⌐220(B)          No                          ▼      ⌐220(A)
◁ ACCEPTABLE ? ▷ ──────────────────▷──── No ──── ◁ ACCEPTABLE ? ▷
  │                                                     │
 Yes                                                   Yes
  │                                                     │
  ▼           ⌐222(B)                                   ▼        ⌐222(A)
┌─────────────────────┐                      ┌─────────────────────┐
│  SEND CURRENT LOC.  │                      │   SEND STORED LOC.  │
│   INFO TO CLIENT    │                      │    INFO TO CLIENT   │
│     TERMINAL        │                      │      TERMINAL       │
└─────────────────────┘                      └─────────────────────┘

                                  ⌐223
                       ┌────────────────────────┐
                       │   SEND ERROR MESSAGE   │
                       └────────────────────────┘
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If the reusability check of step 211 indicates that the stored location information satisfies the accuracy and allowable age specified by the location request (step 211, affirmative decision), the second privacy check is performed on the same stored location information as indicated by steps 219 (A) and 220 (A).

If the reusability check indicates that the stored location information does not satisfy the specified accuracy and allowable age (step 211, negative decision), the verified location request is forwarded from the gateway to the positioning system to obtain current location information of the target mobile terminal (step 234). A second privacy check is performed on the current location information as indicated by steps 219 (B) and 220 (B) to determine if the current location information can be transmitted to the client terminal.

Therefore, when the reusability check indicates that the stored location information satisfies the specified accuracy and allowable age, a second privacy check is performed on the stored location information without transmitting the verified location request to the positioning system in order to decide whether the gateway can transmit the stored location information to the client terminal.

Accordingly, the claimed subject matter is disclosed in the application as filed and the claims avoid the rejection under

§112, first paragraph.

Claims 100-114 were rejected as unpatentable over 3GPP TS 23.171 version 3.8.0 Release 1999 (also cited as ETSI TS 123 171 V3.8.0 (2002-06)), hereinafter 3GPP171, in view of HAVANIS 6,195,557 and NOWAK 6,968,195. The claims have been amended and reconsideration and withdrawal of the rejection are respectfully requested.

Amended claim 100, for example, provides, *inter alia*, a gateway which transmits the location request to the positioning system and stores previously obtained location information of the target mobile terminal. The gateway performs a first privacy check for verifying the location request and performs a reusability check to determine if the stored location information satisfies the accuracy and allowable age specified in the verified location request. If the reusability check is affirmative, then the gateway performs a second privacy check on the stored location information, without transmitting the verified location request to the positioning system, in order to decide whether said gateway can transmit the stored location information to the client terminal.

New independent claim 115 provides, *inter alia*, that a gateway stores location information of the target mobile terminal previously obtained from the positioning system as a result of the gateway transmitting an initial location request from one of the client terminals to the positioning system. The gateway performs

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a first privacy check for verifying a current location request from any of the client terminals and performs a reusability check to determine the stored location information satisfies the accuracy and allowable age specified by the verified current location request, then the gateway performs a second privacy check on the stored location information and transmits the stored location information to the requesting client terminal if the second privacy check is affirmative.

New dependent claim 116 provides that the gateway transmits the verified current location request to the positioning system to obtain current location information of the target mobile terminal if the reusability check is negative, and performs a second privacy check to determine if the current location information satisfies a condition specified by the target mobile terminal and transmits the current location information to the client terminal if the second privacy check is affirmative.

In the § 103 rejection of claim 100, regarding the gateway performing a first privacy check, the Official Action refers to 3GPP171, Section 8.7.1.1, item 1, which discloses that a privacy check is performed on location request for verifying the authenticity of the requesting client. However, the location service system of the present invention includes storing previously received location information (last known location information) and performing a reusability check on the stored location information in response to receipt of a location request

from a client terminal (which is verified by steps 206 and 207) to determine whether the stored location information satisfies the accuracy and allowable age specified in the location request.

Regarding the second privacy check of claim 100, the Official Action refers to 3GPP171, Section 8.7.1.2, item 9, which discloses that a privacy check is performed on current location information. We respectfully disagree. The claimed second privacy check is performed on stored location information, rather than on current location information.

The Examiner further refers to 3GPP171, Section 8.7.7.1, #6 and alleges that privacy verification is disclosed. However, we could not find Section 8.7.7.1 in the cited document. If the Examiner refers to Section 8.7.1.1, item 6, the same argument as given above applies.

HAVANIS discloses, in column 5, lines 49-67 (Fig. 4), that a law enforcement organization performs an override function by forcibly detecting the location of a target UE by ignoring the privacy settings of the target UE. HAVANIS discloses that step 470, Fig. 4, performs a privacy check on a positioning (location) request to determine if mobile station (i.e., UE terminal) allows positioning. If the mobile station does not allow positioning, flow proceeds to step 430 to reject the positioning request. Thus, HAVANIS corresponds to the first privacy check of the applicant's independent claims.

NOWAK discloses selecting a PDE source (position determining

equipment site). A PDE is location information (see column 3, lines 45-46) stored in a cache memory, or a positioning means or method such as cell/sector, TDOA (time difference of arrival) and assisted GPS (see column 4, line 30). The information representing their positioning capabilities are provided in databases 62, 72, 100 and 200 (Fig. 3). The flowchart of Fig. 8 shows the overall operation. At step 720, the location cache is searched for location information that satisfies requested allowable age and accuracy. If the search is successful, the detected location information is transmitted to the requesting site (step 730). If the search fails, database other than the location cache is searched (steps 750, 760). Results of the search are integrated, producing a list of capable PDEs (step 770). Requested items and the positioning capabilities are compared (step 780) to select a PDE and the location request is sent to the selected PDE (step 820).

Therefore, step 720 of NOWAK corresponds to the applicant's reusability check steps 210 and 211 (Fig. 12A) and step 800 corresponds to the applicant's step 234 that is performed when step 211 makes a negative decision on the stored location information.

However, NOWAK does not describe a second privacy check, for example as performed by steps 219 (A) and 220 (A), of the present invention. In the present invention, the same stored location information is checked twice: once for its reusability (i.e.,

accuracy and allowable age) and the next for allowability of its transmission to the requesting terminal depending on the privacy settings of the target mobile terminal. The other references do not make up for this shortcoming.

Accordingly, the amended claims avoid the rejection under §103.

New claims 115-135 have been added and consideration and allowance of the new claims are respectfully requested for the reasons set forth above.

In view of the present amendment and the foregoing remarks, it is believed that the present application has been placed in condition for allowance. Reconsideration and allowance are respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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TWP/dp

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